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10/709,908

06/04/2004

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EXAMINER

CHEN, CHIA WEI A

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/709,908 | Applicant(s) IDE, HIROYUKI | |
| | Examiner CHIA-WEI A. CHEN | Art Unit 2622 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/441,233.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

The end of claim 1 on the claims submitted 3/20/2008 appears to be cut off. The Examiner assumes that the missing portion has not been modified from the original claim.

Appropriate correction is required.

Response to Arguments

2. Applicant's arguments filed 3/20/2008 have been fully considered but they are not persuasive.

Applicant argues with respect to claim 1 that Yanai does not teach wherein the pixel signals transferred by the vertical transfer pulse in a horizontal direction every time a vertical transfer corresponding to *all of* the plurality of horizontal pixel rows is performed.

However, reading the claim in the broadest sense, Yanai teaches wherein the pixel signals transferred by the vertical transfer pulse in a horizontal direction every time a vertical transfer corresponding to *all of* the plurality of horizontal pixel rows is performed. Figures 6-18 of Yanai show the operation of reading the signal charges accumulated in the CCD (see paragraph 0032). Figures 10-18 specifically teach the claimed operation wherein a vertical transfer corresponding to all of the plurality of horizontal pixel rows is performed. In Figure 10, all of the charges are transferred

vertically by one pixel block. Subsequently, in Figure 11, the charges transferred to the HCCD are transferred in the horizontal direction. In Figure 12, again, all of the charges are transferred vertically by one pixel block. Thus, the rejection of claim 1 and all dependent claims are sustained.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claim 1-6 rejected under 35 U.S.C. 102(e) as being anticipated by Yanai (US 2003/0156209 A1).

Claim 1, Yanai teaches an imaging device in Figure 11, comprising:

- a color filter formed by a plurality of color elements each of which has any one of N colors, where N is an integer greater than one (paragraph 0030);
- an imager (solid state image sensing device) having a plurality of pixels (paragraph 0031); and
- a provider for providing a drive pulse to said imager (driving pulses; paragraph 0029), wherein the plurality of color elements are divided into a plurality of color blocks each of which has a plurality of horizontal color element rows and N of vertical color element columns,
- the plurality of pixels are divided into a plurality of pixel blocks each of which has a plurality of horizontal pixel rows and N vertical pixel columns (The CFA and image

sensor may be arbitrarily divided into blocks of horizontal rows and vertical color element columns. The prior art teaches the claimed invention without especially teaching an explicit division of color element or pixel blocks.),

- the N vertical color element columns respectively include N color elements which are different in colors with each other (paragraph 0030; Fig. 4),
- the plurality of horizontal pixel rows respectively correspond to the plurality of horizontal color element rows, the N vertical pixel columns respectively correspond to the N vertical color element columns (respective pixels 1 are covered with elements of the color filter array shown in Figs. 4, 5; paragraph 0031), and
- the drive pulse includes
 - a reading pulse for reading pixel signals from the N vertical pixel columns in a thinning out manner (unread pixels are swept out; paragraph 0034),
 - a vertical transfer pulse for transferring the pixel signals read by the reading pulse in a vertical direction (vertical transfer pulses $\Phi V1$ - $\Phi V8$ for transferring charges to the corresponding vertical transfer elements; paragraph 0029), and
 - a horizontal transfer pulse for transferring the pixel signals transferred by the vertical transfer pulse in a horizontal direction (signal charges transferred in the horizontal direction; paragraph 0035; Fig. 11)

every time a vertical transfer corresponding to all of the plurality of horizontal pixel rows is performed (paragraph 0035), and

the color elements corresponding to pixels selected for reading of the pixel signals from the N vertical pixel columns have different colors for each vertical pixel column (paragraph 0035; Fig. 12-14).

Claim 2, Yanai teaches an imaging device according to claim 1, wherein one pixel of pixel signal is read out from one vertical pixel column forming one pixel block (One pixel signal is read out at a time. Although there is no explicit division of pixel blocks, one pixel is read out at a time from each vertical pixel column into the horizontal register; paragraph 0034; Fig. 6-10)

Claim 3, Yanai teaches an imaging device according to claim 1, wherein each of the N vertical color element columns includes two or more of color elements which have the same color (paragraph 0030; Fig. 4), and a plurality of pixels of pixel signals are read out from each of the N vertical pixel columns (paragraph 0034-0035; Fig. 11).

Claim 4, Yanai teaches an imaging device according to claim 1, wherein the pixel signals are read out from each of the plurality of pixel blocks such that intervals of the horizontal pixel rows each of which includes pixels for reading becomes equal (All horizontal pixel rows are read out simultaneously; paragraph 0036; Fig. 11-14).

Claim 5, Yanai teaches an imaging device according to claim 1, wherein the N colors are green, magenta, yellow and cyan, color elements of the green and the magenta are

alternately arranged on one of odd number of horizontal color element rows and even number of horizontal color elements rows, and color elements of the yellow and cyan are alternately arranged on another of the odd number of horizontal color element rows and the even number of horizontal color element rows (paragraph 0030, Fig. 4; The rows may be shifted up or down to correspond to the claimed even or odd horizontal rows.).

Claim 6, Yanai teaches a digital camera comprising an imaging device according to any one of claims 1 to 5 (video camera; paragraph 0038).

Conclusion

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIA-WEI A. CHEN whose telephone number is (571)270-1707. The examiner can normally be reached on Monday - Friday, 7:30 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chia-Wei A Chen/
Examiner, Art Unit 2622
06/25/2008

***/Ngoc-Yen T. VU/
Supervisory Patent Examiner, Art Unit 2622***